

Abstract Submitted  
for the DPP05 Meeting of  
The American Physical Society

Sorting Category: 5.6.4 (E)

**The Phase II Campaign for the Pegasus Toroidal Experiment**<sup>1</sup>

B. SQUIRES, E. UNTERBERG, D. BATTAGLIA, M. BONGARD, S. BURKE, N. EIDIETIS, R. FONCK, G. GARSTKA, B. KUJAK-FORD, B. LEWICKI, G. WINZ, University of Wisconsin-Madison — The Pegasus upgrade has been completed with the installation of a new 130 MV-A IGCT switched OH power system to provide a programmable  $V_{loop}(t)$  with sub-ms response time. New diagnostics include a multichannel bolometer array, an imaging visible bremsstrahlung array, an X-ray pulse height analyzer, and an improved 1mm interferometer. Initial operation has demonstrated active control of all coil currents and hence more control over plasma formation. The present campaign is using these new capabilities to develop scenarios to access the high  $I_p/I_{TF}$ , high  $I_N$ , high  $\beta_t$  regime of interest. The Phase I performance of  $I_p \sim 0.15$  MA has been recovered with  $< 1/2$  the V-s used previously.  $V_{loop}(t)$  programming has demonstrated increasing control of the plasma formation and mitigation of tearing modes which had constrained the operational space. An array of plasma gun current injectors is planned as a DC-helicity source to extend the effective use of V-s from the OH solenoid and test a new plasma formation scheme.

<sup>1</sup>Work supported by U.S. D.O.E. Grant DE-FG02-96ER54375.

Prefer Oral Session  
 Prefer Poster Session

Gregory Garstka  
garstka@engr.wisc.edu  
University of Wisconsin-Madison

Date submitted: 22 Jul 2005

Electronic form version 1.4